



ATLANTIC  
SALMON RESEARCH  
JOINT VENTURE

PLAN CONJOINT  
DE RECHERCHE SUR LE  
SAUMON ATLANTIQUE

# The Atlantic Salmon Research Joint Venture

Opportunities and challenges of a collaborative  
community response to answering Atlantic salmon's  
big questions

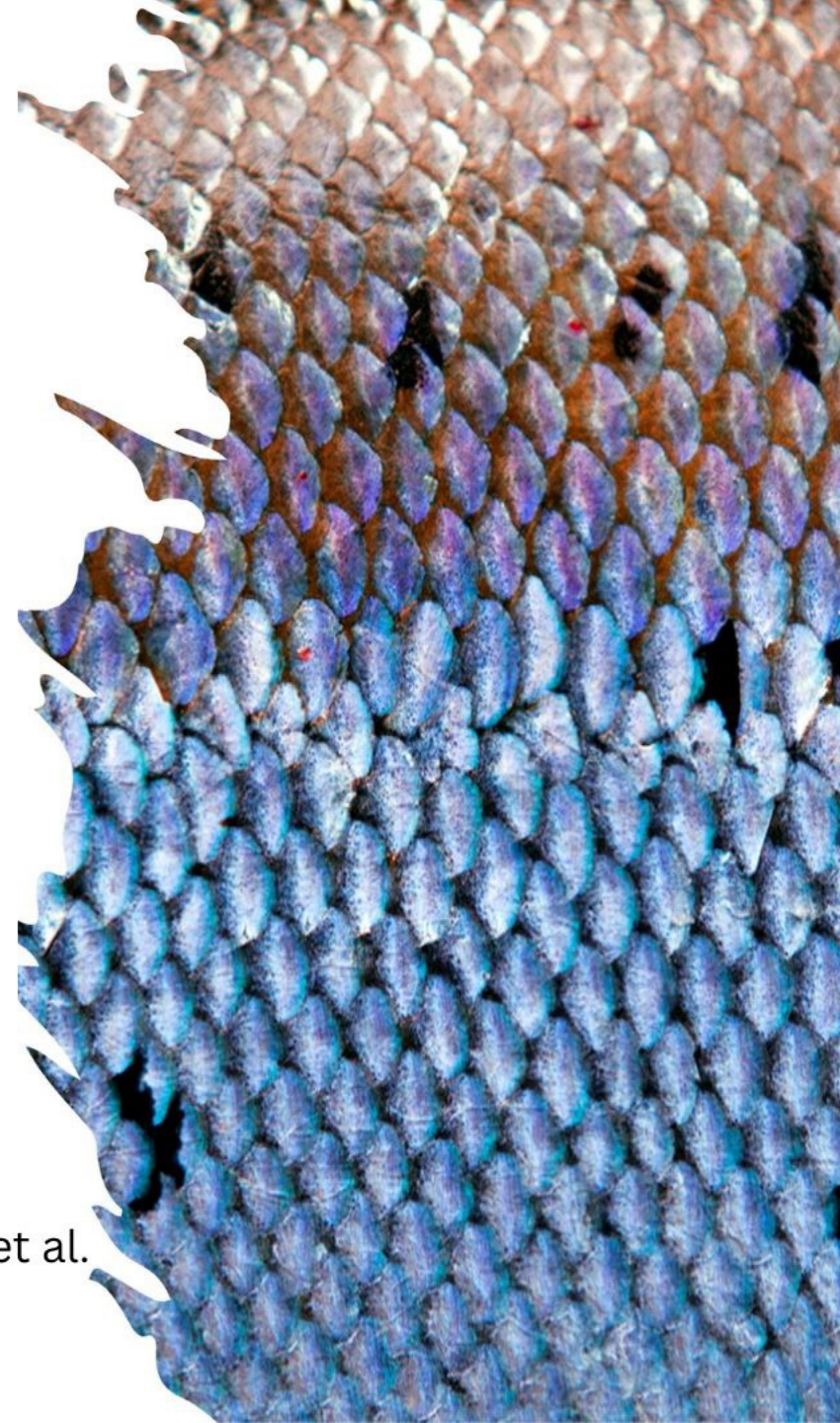


IYoS Symposium

Session Theme: *Towards a Data Driven Future*

October 6th, 2022

Dr. Edmund Halfyard, Dr. Carole-Anne Gillis, Alexis Knight, et al.



# The Complex Problem of Researching Atlantic salmon (*Salmo salar*)

- ❑ Atlantic salmon are a complex, data-rich species
  - Anadromous life cycle
  - Multiple vulnerable points within rivers, ocean
- ❑ Data is widely dispersed
  - Widely studied, international species
- ❑ Historically, a lack of scientific coordination for research and data mobilization efforts

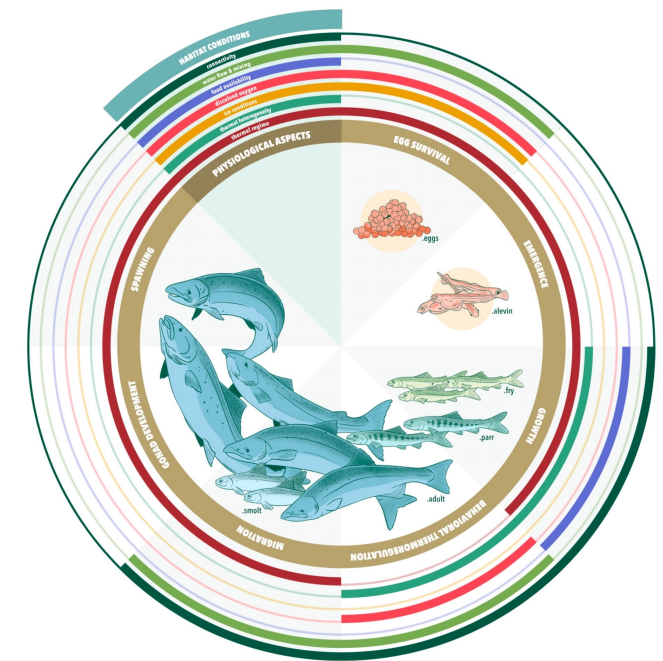


Figure 1 - Gillis et al., 2022 (submitted)

# The ASRJV - *A collaborative solution*

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## **Established by DFO in 2016**

- Founded to be a 'point of focus' organization for previously non-collaborative scientists to address declining wild Atlantic salmon populations together

## **A diverse partnership...**

- Membership comprised of federal, provincial, and state agencies, Indigenous organizations, NGO's and academic institutions

## **Coordinated collaborative research**

- JV partners assess historical data and combine scientific knowledge to determine priority research gaps and initiate projects to address them



# ASRJV MEMBERS

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53 Members | 20 Organizations\*

*\*Actively expanding to increase representation*

Acadia University

Atlantic Salmon Conservation Foundation

Atlantic Salmon Federation

Atlantic Salmon Trust/Missing Salmon Alliance (UK)

Centre interuniversitaire de recherche sur le saumon atlantique

Dalhousie University (Ocean Tracking Network)

Memorial University of Newfoundland

Fisheries and Oceans Canada

Fort Folly First Nation

Gespe'qewaq Mi'gmaq Resource Council

Mi'gmawe'l Tplu'taqnn Inc.

National Oceanic and Atmospheric Administration

NB Department of Energy and Resource Development

Nova Scotia Salmon Association

NS Department of Fisheries and Aquaculture

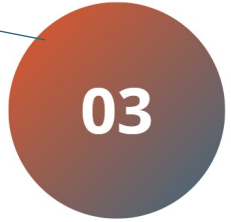
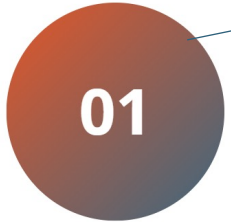
Parks Canada

PEI Department of Communities, Land and Environment

QC Department of Forests, Wildlife and Parks

Unama'ki Institute of Natural Resources

University of New Brunswick - Canadian Rivers Institute



OUR **MISSION**

To enable scientific collaboration that generates and shares knowledge to enhance the recovery, conservation and management of wild Atlantic salmon in North America

OUR **OBJECTIVES**

- Support the conservation, restoration and management of wild Atlantic salmon
- Coordinate the development and application of collaborative research
- Provide scientific expertise and funding to research and monitoring activities
- Improve accessibility of science, research and monitoring data

OUR **VISION**

Working together to improve the status of North American wild Atlantic salmon

# SCIENCE IN THE JV



STRUCTURING A COLLABORATIVE NETWORK TO  
EFFECTIVELY TACKLE KEY THREATS



# Structure of a Collaborative Science Model

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**\*Lead and developed by a SCIENCE COMMITTEE and MANAGEMENT BOARD\***

	<b>THEMES</b>	>> Priority areas of research are identified in <b>themes</b> that are a) wide-ranging, and b) best addressed through partnerships within the eastern North American scientific community.
	<b>PRIORITY HYPOTHESES</b>	>> Derived from research themes, <b>priority hypotheses</b> are developed to directly address backward and forward-looking research questions
	<b>STUDENT HUB</b>	>> Master's, doctoral, and post-doctoral students are hired to tackle priority research and can access knowledge and data through expansive JV network of Atlantic salmon scientists



**OVERALL APPROACH:** Combine backward-looking and forward-looking efforts. Backward looking will analyze existing data to identify trends and relationships while forward-looking will identify new opportunities to collect information including strategies around poorly represented regions and topics.



**THEME 1:**  
Collation of data to test regional-scale trends



**THEME 2:**  
Is marine mortality selective?



**THEME 3:** Collection of NEW data to link FW and SW

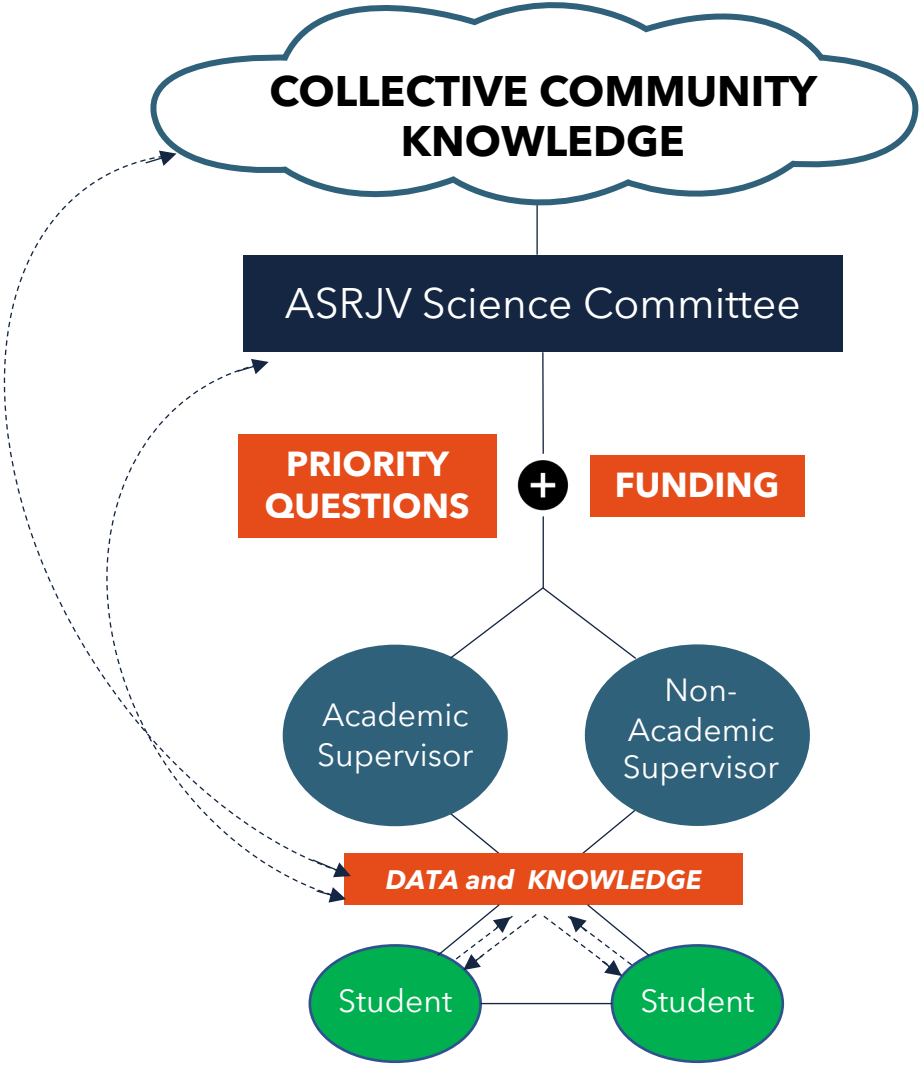


**HISTORICAL DATA  
PROJECTS**

**FORWARD LOOKING  
RESEARCH**



# Mobilizing Knowledge to Shape the Next Gen of Salmon Science



- I. The JV Science Committee **develops priority research questions** and **leverages funding** for student projects
- II. Academically affiliated committee members volunteer to **supervise** a student
- III. A **collaborative information-sharing network** is formed through student-to-student sharing, student-to-science committee sharing
  - Student Hub network provides data sharing, mentorship, and skill-expanding fieldwork opportunities from JV science committee members
  - Collaborations and connections for students built-in to hub membership

Figure 2 - ASRJV 'Student Hub' concept diagram.

# CHALLENGES



BARRIERS ENCOUNTERED IN A MULTI-AGENCY  
COLLABORATIVE ENVIRONMENT



## CHALLENGES OF KNOWLEDGE MOBILIZATION



### Shared Vision and Trust

- Key for data holders and partners to 'buy-into' what amounts to a significant effort
- Vision must accommodate diversity of needs of information owners



### Resources and Time

- Requires a 'champion' to facilitate data collation
- Front-loaded time for careful adaptive planning - must account for diversity of data and yet-to-be formulated questions
- Leveraging expertise and solutions of other big data curators saves time and \$\$\$



### Sharing concerns

- Adding rigor to data means adding work - support for partners is key
- Sensitivities and shame
- Perceived risks of being 'scooped', data misinterpretation, lack of recognition





## 2016-2018 Annual Report



2018

2019



## Atlantic Salmon Ecosystem Forum



2020

## Contribution Agreement (2020-2023)



Fisheries and Oceans Canada  
Pêches et Océans Canada

2021

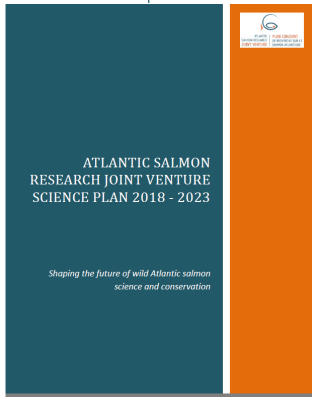
## Year 1: Genetic and Transcriptomic Sampling



## 2022 Fall Conference



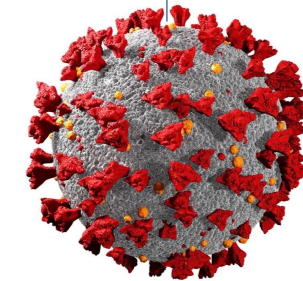
2022



Science Plan (2018-2023)



2018-2019 Annual Report



COVID SABOTAGE!



## Year 2: Genetic and Transcriptomic Sampling

**Mitacs**  
Student Funding Leveraged

# Conclusions and Recommendations

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## **BIG problems require BIG solutions...**

- Collaborative networks like the JV enable the salmon community to address questions not easily addressed by individual organizations
- Moving from close collaborators to broader community

## **Collaboration should be inclusive and beneficial to all parties...**

- Members should see value in participation and see their own value recognized
- HQP support is a commonly-shared value to build around

## **Data mobilization = the path forward!**

- ID and address barriers to sharing



Fisheries and Oceans  
Canada



*Gespe'gewaq Mi'gmaq*  
Resource Council



**INRS**

Institut national  
de la recherche  
scientifique



**to all of our partners**

**and to you... for listening!**



Forêts, Faune  
et Parcs  
Québec

